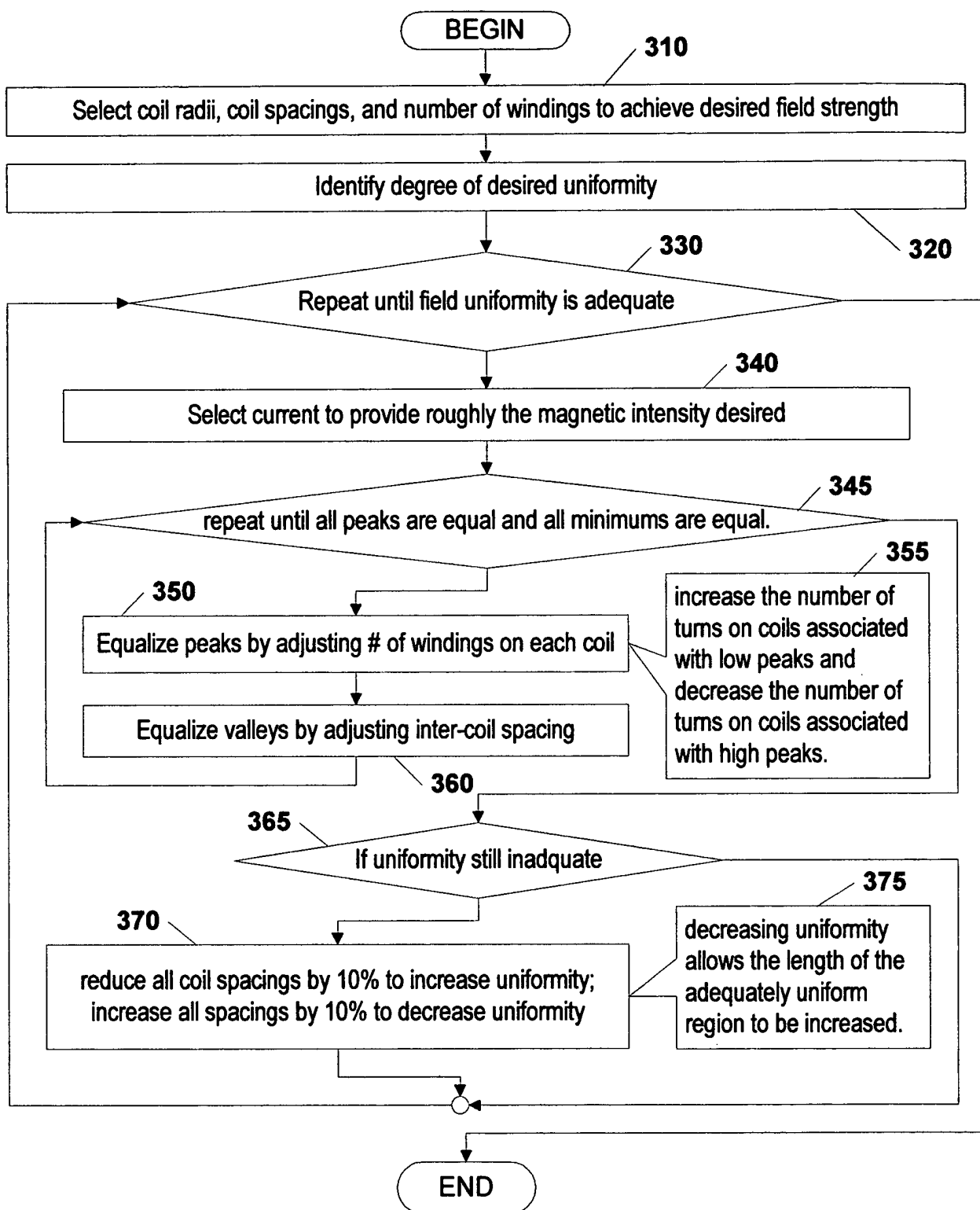


Where:

- $D_o$  = Distance between each end coil and its adjacent coil
- $D_i$  = Distance between the center coil and each of its adjacent coils
- $r$  = radius of each coil
- $N_o$  = Number of turns of wire on each end coil
- $N_i$  = Number of turns of wire on each coil adjacent to an end coil
- $N_c$  = Number of turns of wire on the center coil

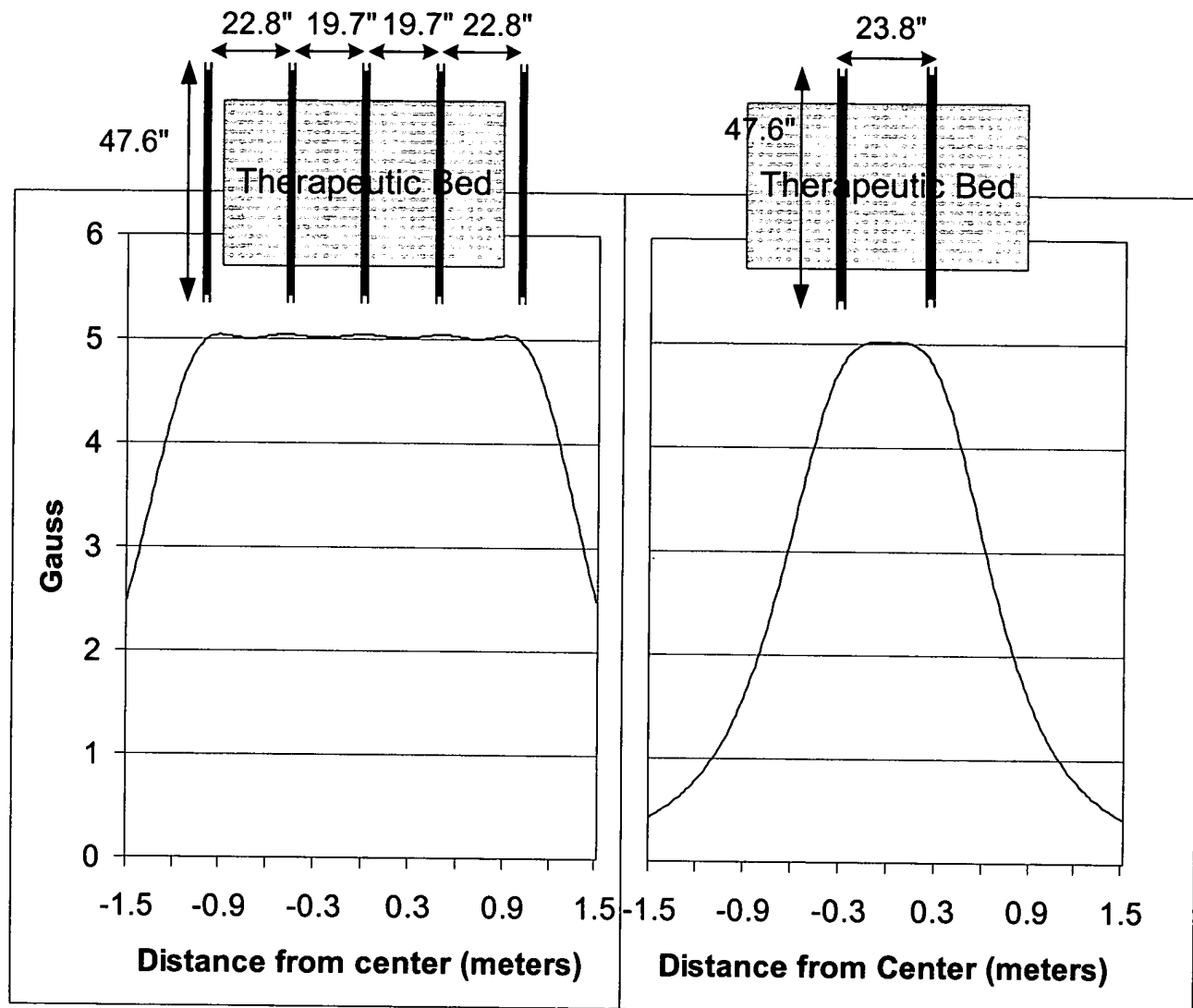
NOTE: All distances listed above are center to center distances

**FIG. 2**  
**Overview of Coil Spacings (for 5 coil system)**



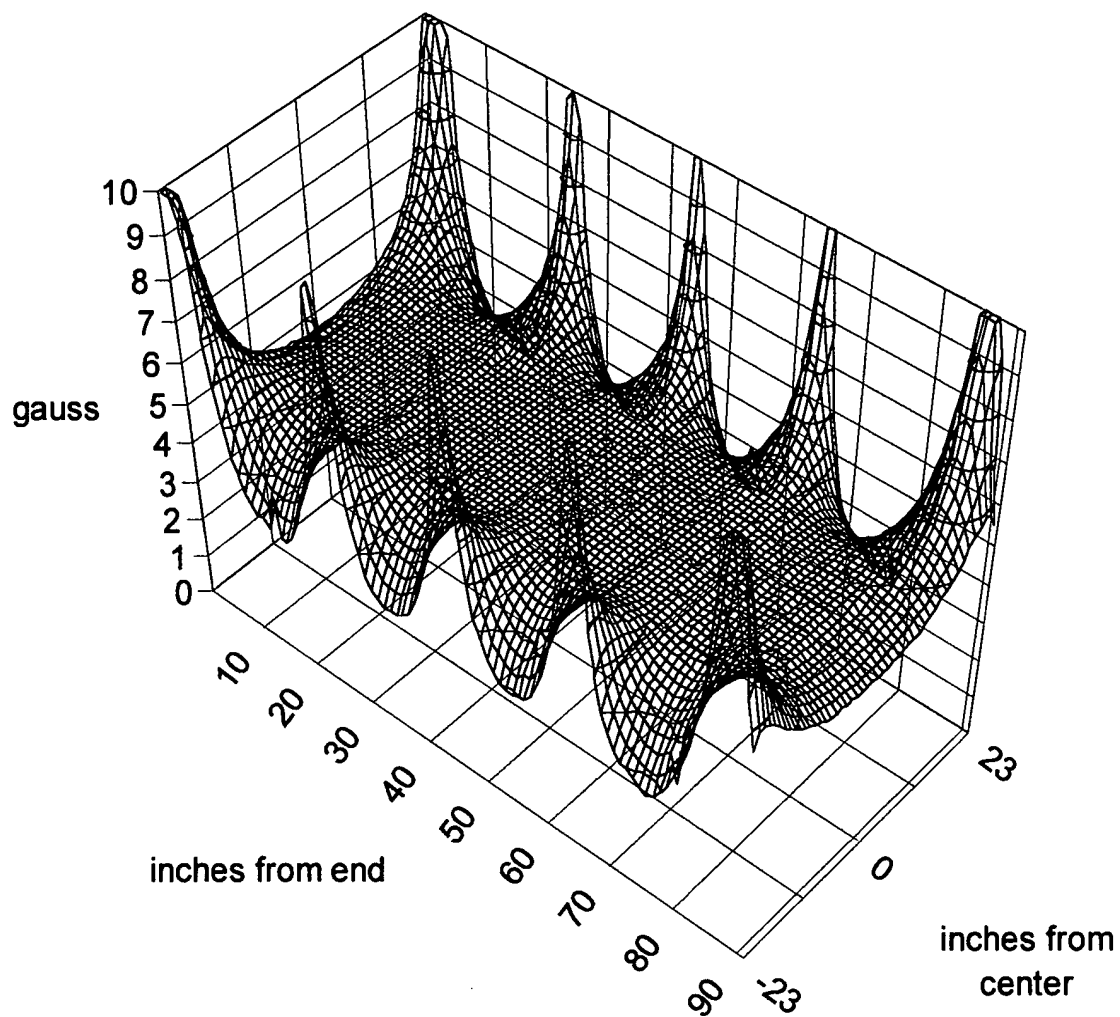
**FIG. 3**  
**Process for Developing an Acceptably**  
**Uniform Field in a Polycoil System**

### Traditional Helmholtz Pair

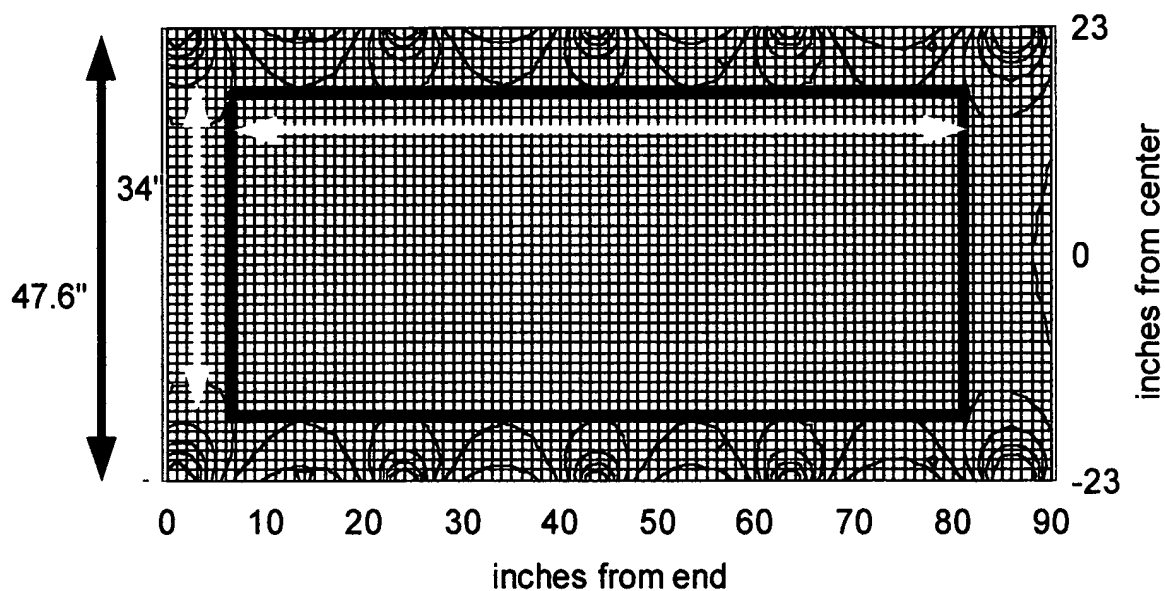


**FIG. 4**  
**Overhead View of Coil Spacings**  
**(for 5 coil system and for Traditional Helmholtz Pair)**

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**FIG. 5**  
**Magnetic Field Strength of Longitudinal Component**



Each curved line =  
change of 1 Gauss

$34"/47.6" = 71\%$  of diameter of patient  
surface has a substantially uniform (i.e.,  
4.5-5.5 Gauss) field strength

**FIG. 6**  
**3-D Surface Map of Magnetic Field Strength**